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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Manabu Komatsu

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EXAMINER

PARK, CHAN S

ART UNIT

PAPER NUMBER

2622

DATE MAILED: 03/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/771,999	Applicant(s) KOMATSU, MANABU	
	Examiner CHAN S. PARK	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.

DOUGLAS Q. TRAN  
 PRIMARY EXAMINER

*Tran*

- 4) ☐ Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/17/05 has been entered.

### ***Response to Amendment***

2. Applicant's amendment was received on 10/17/05, and has been entered and made of record. Currently, **claims 1, 2 and 4-15** are pending.

### ***Response to Arguments***

3. Upon review of the reference of Bollman (U.S. Patent No. 6,778,684), which was cited in the Office Action dated 7/15/05 under 35 U.S.C. 102(e), as being anticipating claims 1, 3-6, 11 and 14, the examiner notes that the reference can still be interpreted as anticipating the claims, as currently amended.

Particularly, as amended, claim 1 now requires "calculating an area where a drawing object is formed, based on at least one attribute of the drawing object when a type of the drawing object indicates the drawing object is character information".

Bollman teaches a method of enhancing the quality/clarity of the image or document

object to be formed especially when the object is to be form on the background (summary of the invention in col. 1). Further, Bollman teaches the method of analyzing the background area where the character data is to be formed and compares the color of the character data and the color of the background to ensure the clarity of the character data with respect to the background color (steps 670 and 672 of fig. 5). Further, it is noted that Bollman teaches the method of indicating that the drawing object is character information (S650 and S660 in fig. 3).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3-6, 11 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Bollman.

4. With respect to claim 1, Bollman teaches a method for processing an image signal, in which method input image information for an input image is converted into an image forming controlling signal for an image forming apparatus (converted signal going from image quality system 100 to image data sink 210 in col. 3, lines 17-26), said method comprising the step of:

a. calculating an area where a drawing object is formed, based on at least one attribute of the drawing object (steps 670 and 672 of fig. 5) when a type of the drawing object indicates the drawing object is character information (S650 and S660 in fig. 3); and

b. controlling a conversion from said input image information into said image forming controlling signal based on the type of the drawing object (col. 2, lines 29-31 & figs. 5-7) for the input image and background information for a background where the drawing object is formed (col. 5, lines 41-49), wherein said background information indicates a value based on a color as a reference in the uniform color space of a single color forming image in the area where said drawing object is formed (col. 5, lines 41-49).

5. With respect to claim 4, Bollman teaches the method as claimed in claim 1, wherein when said image information for said drawing object indicates black or white (determining the color of the character at step 672), said conversion to the image forming controlling signal based on said background information is not controlled (color acceptable (YES at S672) thus no conversion). It is apparent to one of ordinary skill in the art that black image or text data do not require a tone change of the background because the data do not have a similar tone to the background. Thus, the background information is not controlled (col. 5, lines 50-56).

6. With respect to claim 5, Bollman teaches the method as claimed in claim 1, wherein when a color difference between color information for said drawing object and background information in an area where said drawing object is formed is smaller than a

predetermined color difference, said conversion into the image forming controlling signal based on said background information is controlled (col. 5, lines 50-56). Again, since the system detects whether the background and foreground colors are similar, it is apparent that the system has a threshold value or predetermined value to make the comparison for the recommendation.

7. With respect to claim 6, Bollman teaches the method as claimed in claim 5, wherein said predetermined color difference is defined based on a character type, a character size, a character style, a character color, a line type, a line thickness and a part of or the entire line color (col. 5, line 50 – col. 6, line 13; col. 6, lines 33-34 & 51-62; col. 7, lines 41-42).

8. With respect to claim 11, Bollman discloses an apparatus for processing an image signal, in which apparatus input image information for an input image is converted into an image forming controlling signal for an image forming apparatus, said apparatus comprising:

an object type determining part determining a type of a drawing object for an input image (col. 2, lines 29-31 & figs. 5-7);

a calculating part calculating an area where a drawing object is formed, based on at least one attribute of the drawing object (steps 670 and 672 of fig. 5) when the type of the drawing object indicates the drawing object is character information (S650 and S660 in fig. 3)

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a background color information extracting part extracting background information for a background of the area where said drawing object is formed (col. 5, lines 41-49); and

a controlling part controlling a conversion from said input image information into said image forming controlling signal based on the type of the drawing object and the background information (figs. 5-7),

wherein said background information indicates a value based on a color as a reference in the uniform color space of a single color forming image in an area where said drawing object is formed (col. 5, lines 41-49).

9. With respect to claim 14, arguments analogous to those presented for claims 1 and 11, are applicable.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bollman as applied to claim 1 above, and further in view of Bottou et al. U.S. Patent No. 5,900,953 (hereinafter Bottou).

10. With respect to claim 2, Bollman teaches the method as claimed in claim 1, but it fails to teach expressly that the background information indicates an average of background colors in the area where said drawing object is formed.

Bottou, the same field of endeavor of color image processing, teaches a method of determining background and foreground and calculating an average of background colors in an area where foreground object is form (col.3, lines 25-41).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to implement the average calculating method of Bottou into the color image processing system of Bollman.

The motivation/suggestion for doing so would have been to provide a faster foreground/background convergence process (col. 3, lines 56-57 of Bottou).

Therefore, it would have been obvious to combine Bollman with Bottou to obtain the invention as specified in claim 2.

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bollman as applied to claim 1 above, and further in view of Wang et al. U.S. Patent No. 6,636,628 (hereinafter Wang).

11. With respect to claim 7, Bollman teaches the method as claimed in claim 1, wherein said input image is a color image and said image forming apparatus is a color image forming apparatus, but Bollman does not teach expressly the step of correcting color, in said input image, located outside of a color reproduction range of said color image forming apparatus to another color located inside of the color reproduction range.



Wang, the same field of endeavor of color image processing, teaches a color reproduction method comprising a step of correcting a color, in an input image, located outside of a color reproduction range of said color image forming apparatus to another color located inside of the color reproduction range (col. 4, lines 11-13 and col. 6, lines 15-16).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to implement the color correction method of Wang into the image processing control method of Bollman.

The motivation/suggestion for doing so would have been to enhance the features of the image to be generated/printed by correctly converting the input color data into the color data which the printer can read (col. 1, lines 36-40 of Bollman and printer gamut in col. 6, lines 61-62).

Therefore, it would have been obvious to combine Bollman with Wang to obtain the invention as specified in claim 7.

12. With respect to claim 8, the combination of Bollman and Wang teaches the method as claimed in claim 7, wherein Wang further teaches the color correcting step controls a direction to compress and map a color, in said input image, located outside of said color reproduction range to another color located inside of said color reproduction ranges (col. 4, lines 64-67 and col. 6, lines 37-63). Thus, when the color data is controlled in step (a) based on the image type and the background information and the data is to be sent to a printer 210 of Bollman, one would have been motivated to

implement the color compressing and mapping method of Wang to provide a correct color data to the printer.

13. With respect to claim 9, the combination of Bollman and Wang teaches the method as claimed in claim 7, wherein Wang further teaches the color correcting step controls a direction to compress and map a color within a range from a direction maintaining a hue and a brightness to another direction maintaining a saturation (col. 6, lines 33-35). Additionally, Bollman also teaches the method of controlling the brightness of the image (col. 5, lines 57-62).

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Bollman and Wang as applied to claim 8 above, and further in view of Bottou.

14. With respect to claim 10, the combination does not teach expressly that the background information indicates an average of the background colors in an area where said drawing object is formed.

Bottou, the same field of endeavor of color image processing, teaches a method of determining background and foreground and calculating an average of background colors in an area where foreground object is form (col.3, lines 25-41).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to implement the average calculating method of Bottou into the color image processing system of Bollman and Wang.

The motivation/suggestion for doing so would have been to provide a faster foreground/background convergence process (col. 3, lines 56-57 of Bottou).

Therefore, it would have been obvious to combine the three references to obtain the invention as specified in claim 10.

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bollman as applied to claim 11 above, and further in view of Wang.

15. With respect to claim 12, arguments analogous to those presented for claim 7, are applicable.

16. With respect to claim 13, arguments analogous to those presented for claim 8, are applicable.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bollman in view of Wang.

17. With respect to claim 15, Bollman discloses a computer-readable recording medium recorded with a program for causing a computer to process an image signal, in which computer input image information for an input image is converted into an image forming controlling signal for an image forming apparatus (converted signal going from image quality system 100 to image data sink 210 in col. 3, lines 17-26), said program comprising the codes of:

determining a type of a drawing object for said input image (col. 2, lines 29-31 & figs. 5-7); and

extracting background information for a background where said drawing object is formed (col. 5, lines 41-49),

wherein said background information shows a value based on a color as a reference in the uniform color space of a single color forming image in an area where said drawing object is formed (col. 5, lines 41-49).

Bollman, however, does not teach expressly the step of controlling a direction to compress and map a color, in said input image, located outside of said color reproduction range to another color located inside of said color reproduction ranges based on the type of the drawing object and the background information.

Wang, the same field of endeavor of color image processing, teaches the color correcting step controls a direction to compress and map a color, in said input image, located outside of said color reproduction range to another color located inside of said color reproduction ranges (col. 4, lines 64-67 and col. 6, lines 37-63). Thus, when the color data is controlled in step (a) based on the image type and the background information and the data is to be sent to a printer 210 of Bollman, one would have been motivated to implement the color compressing and mapping method of Wang to provide a correct color data to the printer.

Also read col. 4, lines 11-13 and col. 6, lines 15-16.

**Contact Information**

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHAN S. PARK whose telephone number is (571) 272-7409. The examiner can normally be reached on M-F 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Moore can be reached on (571) 272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

csp  
February 24, 2006

Chan S. Park  
Examiner  
Art Unit 2625

*Chan S. Park*

DOUGLAS Q. TRAN  
PRIMARY EXAMINER

*Tranlong*